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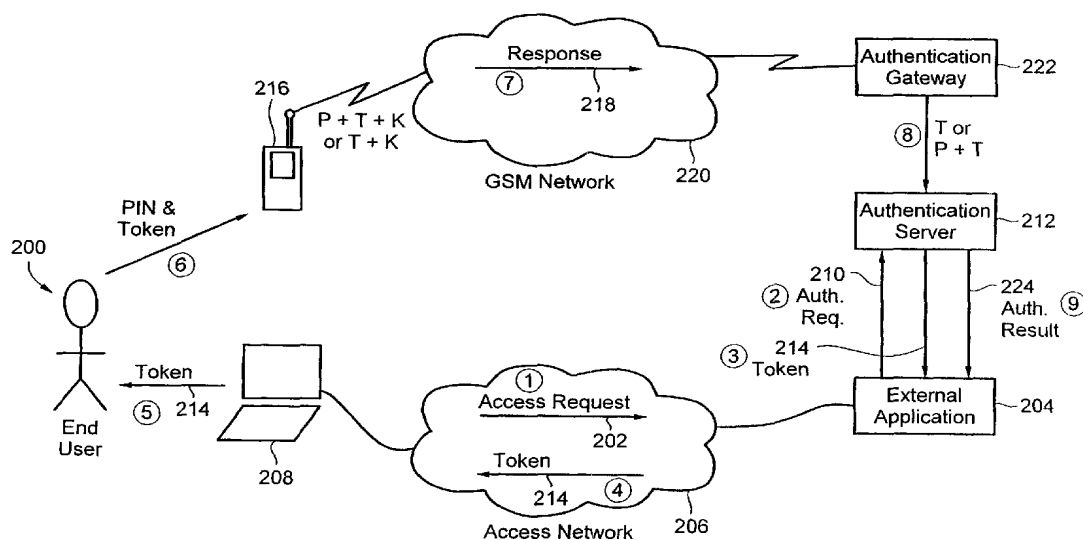
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(54) Title: END-USER AUTHENTICATION INDEPENDENT OF NETWORK SERVICE PROVIDER



(57) Abstract: A system and method for verifying the identity of an end-user. The end-user requests to access an external application. The external application sends an authentication request to an authentication server, which generates a random token. The generated token is transmitted to the end-user. The end-user enters the generated token and a personal identification number into a cellular terminal connected to a GSM network. At least the token is encrypted using a secret key stored within the cellular terminal and transmitted through the GSM network to an authentication gateway. The token is decrypted by the authentication gateway using either the same secret key or a key matched to the secret key. The token is then transmitted to the authentication server where the received key is compared to the generated key. The results of the comparison are transmitted to the external application.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, IBM-TDB, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 668 876 A (FALK JOHAN PER ET AL) 16 September 1997 (1997-09-16) abstract column 3, line 1 - line 50 column 4, paragraph 3 column 5, line 23 - line 55 column 8, line 41 - line 64; figure 1A	1-5, 10, 14, 15
A	----	6-9, 11
E	WO 02 01516 A (AUCSHITH DAVID ;INTEL CORP (US); SULLIVAN ROBERT JR (US)) 3 January 2002 (2002-01-03) abstract page 8, paragraph 4 -page 10, paragraph 1 ----- -/--	1-3



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 44114 A (ERICSSON TELEFON AB L M) 2 September 1999 (1999-09-02) abstract page 9, paragraph 3 page 13, paragraph 3 page 15, paragraph 3 -page 16, paragraph 2 page 19, paragraph 3 -page 21, paragraph 1 page 23, paragraph 4 -page 24, paragraph 1 ---	1-15
A	US 6 078 908 A (SCHMITZ KIM) 20 June 2000 (2000-06-20) abstract column 2, line 57 -column 3, line 55 ---	4,5
A	WO 00 44130 A (BERGGREN ULF ;NETCOM AB (SE)) 27 July 2000 (2000-07-27) abstract page 5, line 26 -page 6, line 6 claims 1,16 ---	1-15
A	US 6 061 650 A (KOSSACK NANCY ET AL) 9 May 2000 (2000-05-09) abstract column 2, line 26 -column 4, line 49 column 5, line 35 - line 39; figure 1 -----	12,13

INTERNATIONAL SEARCH REPORT
Information on patent family members

International Application No

PC/JP 01/01814

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5668876	A	16-09-1997	AU 692881 B2	18-06-1998
			AU 2688795 A	19-01-1996
			CA 2193819 A1	04-01-1996
			EP 0766902 A2	09-04-1997
			FI 965161 A	13-02-1997
			JP 10502195 T	24-02-1998
			WO 9600485 A2	04-01-1996
WO 0201516	A	03-01-2002	WO 0201516 A2	03-01-2002
WO 9944114	A	02-09-1999	FI 980427 A	26-08-1999
			AU 2831699 A	15-09-1999
			BR 9908246 A	31-10-2000
			CN 1292108 T	18-04-2001
			EE 200000491 A	15-02-2002
			WO 9944114 A1	02-09-1999
			EP 1058872 A1	13-12-2000
			JP 2002505458 T	19-02-2002
US 6078908	A	20-06-2000	DE 19718103 A1	04-06-1998
			AU 6354598 A	05-11-1998
			BR 9801177 A	20-03-2001
			CN 1207533 A	10-02-1999
			EP 0875871 A2	04-11-1998
			JP 10341224 A	22-12-1998
			TW 425804 B	11-03-2001
WO 0044130	A	27-07-2000	SE 516066 C2	12-11-2001
			AU 2335900 A	07-08-2000
			WO 0044130 A1	27-07-2000
US 6061650	A	09-05-2000	NONE	